850-2,550	$3.54
2,550-5,000	$4.27
5,000-10,000	$13.00
10,000+	$45.00

Copper Feeder Pole Investment

DEFINITION

The installed cost of a 40' Class 4, treated southern pine pole.

DEFAULT VALUE

Pole Investment	
Labor	$201
Materials	$216
Total	$417

Copper Feeder Conduit Installation Cost/Foot

DEFINITION

The cost per foot of placing underground conduit and copper feeder cable.

DEFAULT VALUES

Copper Feeder Conduit Installation Cost/Foot	
Density Zone	Cost/ft.
0-5	$10.29
5-100	$10.29
100-200	$10.29
200-650	$11.35
650-850	$11.38
850-2,550	$16.40
2,550-5,000	$21.60
5,000-10,000	$50.10
10,000+	$75.00

Conduit Material Investment per foot

DEFINITION

Material cost per foot of duct for 4" PVC.

DEFAULT VALUE

$0.60

Inner Duct Material Investment per foot

DEFINITION

Material cost per foot of innerduct for 4" PVC.

DEFAULT VALUE

$0.30

Manhole Investment, materials and labor

DEFINITION

The installed cost of a prefabricated concrete manhole, including backfill and restoration.

DEFAULT VALUE

Copper Cable Manhole Investment						
Density Zone	Materials	Frame & Cover	Site Delivery	Total Material	Excavation & Backfill	Total Installed Manhole
0-5	$1,865	$350	$125	*$2,340*	$2,800	*$5,140*
5-100	$1,865	$350	$125	*$2,340*	$2,800	*$5,140*
100-200	$1,865	$350	$125	*$2,340*	$2,800	*$5,140*
200-650	$1,865	$350	$125	*$2,340*	$2,800	*$5,140*
650-850	$1,865	$350	$125	*$2,340*	$3,200	*$5,540*
850-2,550	$1,865	$350	$125	*$2,340*	$3,500	*$5,840*
2,550-5,000	$1,865	$350	$125	*$2,340*	$3,500	*$5,840*
5,000-10,000	$1,865	$350	$125	*$2,340*	$5,000	*$7,340*
10,000+	$1,865	$350	$125	*$2,340*	$5,000	*$7,340*

Fiber Feeder Parameters

Fiber Feeder Cable, $/foot

DEFINITION

The cost per foot of fiber feeder cable, as a function of cable size, including the costs of engineering, installation, and delivery, as well as the cable material itself.

DEFAULT VALUE

Fiber Feeder Investment, per foot	
Cable Size	$/foot (dig & aerial)
216	$13.10
144	$9.50
96	$7.10
72	$5.90
60	$5.30
48	$4.70
36	$4.10
24	$3.50
18	$3.20
12	$2.90

Fiber Feeder Buried Installation, cost per foot

DEFINITION

The cost per foot of placing buried fiber feeder cable in trenches.

DEFAULT VALUES

Fiber Feeder Buried Installation, per foot	
Density Zone	Cost/ft.
0-5	$1.77
5-100	$1.77
100-200	$1.77
200-650	$1.93
650-850	$2.17
850-2,550	$3.54
2,550-5,000	$4.27
5,000-10,000	$13.00
10,000+	$45.00

Fiber Feeder Conduit Installation, per foot

DEFINITION

The cost per foot of placing underground conduit and fiber feeder cable.

DEFAULT VALUES

Fiber Feeder Conduit Installation, per foot	
Density Zone	Cost/ft.
0-5	$10.29
5-100	$10.29
100-200	$10.29
200-650	$11.35
650-850	$11.38
850-2,550	$16.40
2,550-5,000	$21.60
5,000-10,000	$50.10
10,000+	$75.00

Fiber Feeder Pullbox Investment

DEFINITION

The investment per fiber pullbox in the feeder portion of the network.

DEFAULT VALUES

Fiber Pullbox Investment		
Density Zone	Pullbox Materials	Pullbox Installation
0-5	$280	$220
5-100	$280	$220
100-200	$280	$220
200-650	$280	$220
650-850	$280	$220
850-2,550	$280	$220
2,550-5,000	$280	$220
5,000-10,000	$280	$220
10,000+	$280	$220

Fiber Feeder Fill Factor

DEFINITION

Percentage of fiber strands in a cable that are available to be utilized.

DEFAULT

Fiber Feeder [illegible]	
Density Zone	[illegible]
0-5	1.00
5-100	1.00
100-200	1.00
200-650	1.00
650-850	1.00
850-2,550	1.00
2,550-5,000	1.00
5,000-10,000	1.00
10,000+	1.00

Remote Terminal Parameters

Remote terminal fill factor

DEFINITION

Definition: The line unit fill factor in a DLC remote terminal, that is, the; the ratio of lines served by a DLC remote terminal to the number of line units equipped in the remote terminal.

DEFAULT VALUE

Remote Terminal Fill Factors	
TR-303 DLC	Low Density DLC
.90	.90

TR-303 DLC site and power per remote terminal

DEFINITION

The investment associated with site and power for the remote terminal of a Digital Loop Carrier (DLC) system serving a large number of subscribers and configured for TR-303.

DEFAULT VALUE

$3,000

TR-303 DLC basic common equipment investment + initial lines

DEFINITION

The cost of all common equipment and housing in the remote terminal, as well as the fiber optics multiplexer required at the CO end of the DLC system (assumes integrated digital loop carrier (IDLC)).

DEFAULT VALUE

$66,000

TR-303 DLC channel unit investment per line

DEFINITION

The per line investment in channel units required in the remote terminal of the DLC system.

Default Value

TR-303 DLC channel unit investment per line	
POTS Channel Unit	Coin Channel Unit
$310	$250

TR-303 DLC Lines per CU

DEFINITION

The number of lines that can be supported on a single DLC channel unit.

DEFAULT VALUE

TR-303 DLC Lines per CU	
POTS	Coin
4	2

Low Density DLC site and power per remote terminal

DEFINITION

The investment associated with site and power for the remote terminal of a low density DLC system.

DEFAULT VALUE

$2,500

Low density DLC common equipment investment + initial lines

DEFINITION

The cost of all common equipment and housing in the remote terminal, as well as the fiber optics multiplexer required at the CO end of the low density DLC system.

DEFAULT VALUE

$13,000

Low density DLC channel unit investment per line

DEFINITION

The per line investment in channel units required in the remote terminal of the low density DLC system.

DEFAULT VALUE

Low density DLC channel unit investment per line	
POTS Channel Unit	Coin Channel Unit
$310	$250

Low density DLC Lines per CU

DEFINITION

The number of lines that can be supported on a single low density DLC channel unit.

DEFAULT VALUE

Low density DLC Lines per CU	
POTS	Coin
4	2

Fibers per remote terminal

DEFINITION

The number of fibers connected to each DLC remote terminal, including one for upstream transmission, one for downstream transmission, and two for redundancy.

DEFAULT VALUE

Fibers per Remote Terminal	
TR-303 DLC	Low density DLC
4	4

Maximum Line Size per Remote Terminal

DEFINITION

The maximum number of lines supported by the initial line module of a remote terminal.

DEFAULT

Maximum Line Increment per Remote Terminal	
TR-303 DLC	Low density DLC
672	96

Common Equipment Investment per Additional Line Increment

DEFINITION

The cost of the common equipment required to add each additional line module in a remote terminal.

DEFAULT

Common Equipment Investment per Additional Line Increment	
672	96
$18,500	$11,000

Maximum Number of Additional Line Modules per Remote Terminal

DEFINITION

The number of line modules (in increments of 672 or 96 lines) that can be added to a remote terminal.

DEFAULT

Max. # Add. Line Modules/RT	
TR-303 DLC	Low density DLC
2	1

Low Density DLC to TR-303 DLC Cutover

DEFINITION

The threshold number of lines served, above which the TR-303 DLC will be utilized.

DEFAULT

384

Optical Patch Panel

DEFINITION

The investment required for each optical patch panel.

DEFAULT

Optical Patch Panel	
TR-303 DLC	Low-density DLC
$1000	$1000

Miscellaneous

Regional Labor Adjustment Factor

DEFINITION

A factor that adjusts the labor cost portion of certain investments to account for regional differences in the availability of trained labor, union contracts, and cost of living factors.

DEFAULT VALUE

1.0

Public Telephone equipment investment per station

DEFINITION

The weighted average cost of a public telephone and pedestal (coin/non-coin and indoor/outdoor).

DEFAULT VALUE

$760

Central Office

Wire Center Parameters

Lot size, multiplier of switch room size

DEFINITION

The multiplier of switch room size to arrive at total lot size, assuming that land area is needed to accommodate building plus parking requirements.

DEFAULT VALUE

2

Tandem/EO wire center common factor

DEFINITION

The percentage of tandem switches which are also end office switches or are collocated in wire centers with end office switches. This accounts for the fact that tandems and end offices are often located together, and is employed to avoid double counting of land and other wire center investment in these instances.

DEFAULT VALUE

0.4

Power investment

DEFINITION

The wire center investment required for rectifiers, battery strings, back-up generators and various distributing frames, as a function of switch line size.

DEFAULT VALUE

Lines	Investment Required
0	$5,000
1000	$10,000
5000	$20,000
25,000	$50,000
50,000	$250,000

Switch room size

DEFINITION

The area in square feet required to house a switch and its related equipment.

DEFAULT VALUE

Switch Room Size	
Lines	Sq. Feet of Floor Space Required
0	500
1,000	1,000
5,000	2,000
25,000	5,000
50,000	10,000

Construction costs, per sq. ft.

DEFINITION

The costs of construction of a wire center building.

DEFAULT VALUE

Construction Costs per sq. ft.	
lines	cost/sq. ft.
0	$75
1,000	$85
5,000	$100
25,000	$125
50,000	$150

Land price, per sq. ft.

DEFINITION

The land price associated with a wire center.

DEFAULT VALUE

lines	price/sq. ft.
0	$5.00
1,000	$7.50
5,000	$10.00
25,000	$15.00
50,000	$20.00

Constant End Office Switching Investment Term

DEFINITION

The value of the constant appearing in the function that calculates the per line switching investment as a function of switch line size, expressed separately for BOCs and large independents and for small independents.

DEFAULT VALUES

BOC and large ICO - $242.73
Small ICO - $416.11

Traffic Parameters

Call attempts, Busy Hour (BHCA), residential/business

DEFINITION

The number of call attempts originated by residential and business subscribers during the busy hour.

DEFAULT VALUE

Busy Hour Call Attempts	
Residential	Business
1.3	3.5

Holding time multipliers, residential/business

DEFINITION

The potential modification to the average call "holding time" (i.e., duration) to reflect Internet use or other causes, expressed as a multiplier of the holding time associated with ordinary residential or business telephone calls.

DEFAULT VALUE

Holding time multipliers	
Residential	Business
1.0	1.0

Busy hour fraction of daily usage

DEFINITION

The percentage of daily usage that occurs during the busy hour.

DEFAULT VALUE

0.10

Annual to daily usage reduction factor

DEFINITION

The effective number of business days in a year, used to concentrate annual usage into a fewer number of days as a step in determining busy hour usage.

DEFAULT VALUE

270

Call Completion Fraction

DEFINITION

The percentage of calls that result in a message. By this definition, calls that result in a busy signal, no answer, or network blockage are all considered incomplete.

DEFAULT VALUE

0.7

Local bus/res DEMs ratio

DEFINITION

The ratio of local Business DEMs per line to local Residential DEMs per line

DEFAULT VALUE

1.1

Intrastate bus/res DEMs

DEFINITION

The ratio of intrastate Business DEMs per line to intrastate Residential DEMs per line

DEFAULT VALUE

2

Interstate bus/res DEMs

DEFINITION

The ratio of interstate Business DEMs per line to interstate Residential DEMs per line

DEFAULT VALUE

3

Switch Parameters

Switch installation multiplier

DEFINITION

Definition: The telephone company investment in switch engineering and installation activities, expressed as a multiplier of the switch investment.

DEFAULT VALUE

1.10

Initial Switch maximum equipped line size

DEFINITION

The maximum number of lines that a typical digital switching machine can support.

DEFAULT VALUE

80,000

Switch port administrative fill

DEFINITION

The percent of lines in a switch that are working, compared to the total lines in a switch.

DEFAULT VALUE

0.98

Switch maximum processor occupancy

DEFINITION

The fraction of total capacity (measured in busy hour call attempts, BHCA) an end office switch is allowed to carry before the model adds another switch.

DEFAULT VALUE

0.90

Processor feature loading multiplier

DEFINITION

The amount by which the load on a switch exceeds the load associated with ordinary telephone calls, due to the presence of vertical features such as Centrex, 3-way calling, etc., expressed as a multiplier of nominal load.

Default Value

Processor Feature Loading Multiplier		
Normal	Heavy	Business
1.20	2.00	3.00

Business Penetration Ratio

DEFINITION

The percentage of business lines to total line at which the processor feature loading multiplier is assumed to reach the "heavy business" value of 2.

DEFAULT VALUE

0.30

MDF/Protector Investment per Line

DEFINITION

The Main Distribution Frame investment required to terminate one line.

DEFAULT VALUE

$17.50

Analog Line Circuit Offset for DLC lines, per line

DEFINITION

The amount of reduction in per line switched cost caused by the deletion of line cards for lines served by DLC, because the interface to the switch is not on a per line basis.

DEFAULT VALUE

$35.00

Switch real-time limit, busy hour call attempts

DEFINITION

The maximum number of busy hour call attempts (BHCA) a switch can handle. If the model determines that the load on a switch, calculated as the number of busy hour call attempts times the processor feature load multiplier, would exceed the switch real time limit multiplied by the switch maximum processor occupancy, it will require the addition of another switch.

DEFAULT VALUES

Switch Real-time limit, BHCA	
Lines Served	BHCA
1-1,000	10,000
1,000-10,000	50,000
10,000-40,000	200,000
40,000+	600,000

Switch traffic limit, BHCCS

DEFINITION

The maximum amount of traffic, measured in hundreds of call seconds (CCS), the switch can carry in the busy hour (BH).

DEFAULT VALUE

Lines	Busy Hour CCS
1-1,000	30,000
1,000-10,000	150,000
10,000-40,000	600,000
40,000+	1,800,000

Interoffice Transport and Tandem Switching

Traffic Parameters

Operator traffic fraction

DEFINITION

Percentage of all calls that require operator assistance. This assistance can be automated or manual (see Operator Intervention Fraction in the Operator Systems section below)

DEFAULT

0.02

Total interoffice traffic fraction

DEFINITION

The fraction of all calls that are completed on a switch other than the originating switch, as opposed to calls completed within a single switch.

DEFAULT

0.65

Direct-routed fraction of local inter-office

DEFINITION

The amount of local interoffice traffic that is directly routed between originating and terminating end offices as opposed to being routed via a tandem switch.

DEFAULT

0.98

Tandem routed fraction of total intraLATA traffic

DEFINITION

Percentage intraLATA calls that are routed through a tandem.

DEFAULT

0.2

Tandem routed fraction of total interLATA traffic

DEFINITION

Percentage of interLATA (IXC access) calls that are routed through a tandem instead of directly to the IXC.

DEFAULT

0.2

Entrance Facility Distance for Serving Wire Center

DEFINITION

Average length of trunks connecting the IXC with the tandem/EO that serves it

DEFAULT

0.5 miles

Trunk Parameters

Maximum trunk occupancy, CCS

DEFINITION

The maximum utilization of an interoffice trunk during the busy hour.

DEFAULT

27.5

Trunk port investment, per end

DEFINITION

Per trunk equivalent investment in trunk termination equipment at each end of a trunk

DEFAULT

$100

Tandem Parameters

Port limit, trunks

DEFINITION

The maximum number of trunks that can be terminated on a tandem switch.

DEFAULT

100,000

Maximum Initial Trunk Port Occupancy

DEFINITION

The fraction of the maximum number of trunk ports on a tandem switch that can be utilized before the HM will add another tandem switch.

DEFAULT

0.90

SUPPORT

Industry experience and expertise of Hatfield Associates and AT&T/MCI outside switching experts.

Real time limit, BHCA

DEFINITION

The maximum number of BHCA a tandem switch can process.

DEFAULT

750,000

Maximum real time tandem occupancy

DEFINITION

The fraction of the total capacity (expresses as the real time limit, BHCA) a tandem switch is allowed to carry before the model dictates adding another tandem switch.

DEFAULT

0.9

Tandem common equipment investment

DEFINITION

The amount of investment in tandem switch common equipment, which is the hardware and software that is present in the tandem in addition to the trunk terminations themselves. The cost of a tandem is estimated by the HM as the cost of common equipment plus an investment per trunk terminated on the tandem.

DEFAULT

$1,000,000

Tandem common equipment intercept factor

DEFINITION

The multiplier of the common equipment investment input that gives the common equipment cost for the smallest tandem switch.

DEFAULT

0.50

Per Line ICO Local Tandem Investment

DEFINITION

The surrogate value for the per line investment in Operator Services tandem switch by an independent telephone company (ICO), in lieu of calculating it directly in the model.

DEFAULT VALUE

$2.00

Per Line ICO OS Tandem Investment

DEFINITION

The surrogate value for the per line investment in a local tandem switch by an independent telephone company (ICO), in lieu of calculating it directly in the model.

DEFAULT VALUE

$2.00

DS-0/DS-1 Terminal Factor

DEFINITION

The relative investment per DS-0, between the DS-1 and DS-0 levels.

DEFAULT VALUE

12.4

DS-1/DS-3 Terminal Factor

DEFINITION

The relative investment per DS-0, between the DS-1 and DS-0 levels.

DEFAULT

9.9

Interoffice Transport Terminals

Transmission Terminal Investment

DEFINITION

The investment in the add-drop multiplexers (ADM) that extract/insert OC-3 signals into OC-48 fiber rings, and are needed in each wire center to connect to the interoffice fiber ring or point to point circuit.

DEFAULT VALUE

Transmission Terminal Investment			
OC-48 ADM, Installed		OC-48/DS3 Terminal Multiplexer, Installed	Investment per 1 DS1s
48 DS-3s	12 DS-3s	24 DS1s	
$50,000	$37,000	$26,000	$500

Channel Bank Investment, per 24 lines

DEFINITION

The investment in DS-0 to DS-1 multiplexers in wire centers required for some special access circuits.

DEFAULT VALUE

$5,000

Fraction of SA Lines Requiring Multiplexing

DEFINITION

The percentage of special access circuits that require DS-0 to DS-1 multiplexing in the wire center in order to be carried on the interoffice transmission system.

DEFAULT VALUE

0.10

DSX-1 Panel, Installed, per DS-1

DEFINITION

The investment required for each DSX-1 panel used in conjunction with special access circuits in the wire center.

DEFAULT VALUE

$1,750

Number of Strands per ADM

DEFINITION

The number of interoffice fiber strands connected to the ADM in each wire center. Typically, at least four are required around the ring.

DEFAULT VALUE

4

Transmission Terminal Fill (DS-0 level)

DEFINITION

The fraction of maximum DS-0 circuit capacity that can actually be utilized in ADMs and OC-1 to OC-3 multiplexers.

DEFAULT VALUE

0.90

Pigtails

DEFINITION

The cost of the short fiber connectors that attach the interoffice ring fibers to the wire center transmission equipment via a patch panel.

DEFAULT VALUE

$60.00 per pigtail

Optical Distribution Panel

DEFINITION

The cost of the physical fiber patch panel used to connect 24 fibers to the transmission equipment.

DEFAULT VALUE

$1000.00

EF&I, per hour

DEFINITION

The per-hour cost for the "engineered, furnished, and installed" activities for equipment in each wire center associated with the interoffice fiber ring, such as the "pigtails" and patch panels to which the transmission equipment is connected.

DEFAULT VALUE

$55.00

EF&I, units

DEFINITION

The number of hours required to install the equipment associated with the interoffice transmission system (see EF&I, per hour, above).

DEFAULT VALUE

32 hours

Number of fibers

DEFINITION

The assumed fiber cross-section, or number of fibers in a cable, in the interoffice fiber ring and point to point network.

DEFAULT VALUE

24

Regenerator spacing, mi.

DEFINITION

The distance between digital signal regenerators in the interoffice fiber optics transmission system.

DEFAULT VALUE

40 mi.

Regenerator investment, installed

DEFINITION

The installed cost of an OC-48 optical regenerator.

DEFAULT VALUE

$15,000

Interoffice Fiber Cable investment per foot, installed

DEFINITION

The installed cost per foot of interoffice fiber cable, assuming a 24-fiber cable.

DEFAULT VALUE

$3.50 installed and buried

Buried Sheath Addition

DEFINITION

The cost of dual sheathing for additional mechanical protection of fiber interoffice transport cable.

DEFAULT VALUE

$0.20/foot

Transport Structure Parameters

Structure Percentages

DEFINITION

The relative amounts of different structure types supporting feeder cable, by density zone, in the interoffice network. Aerial distribution cable is attached to telephone poles or buildings, buried cable is laid directly in the earth, and underground cable runs through underground conduit.

DEFAULT VALUES

Structure Percentage		
Underground %	Buried %	Aerial %
20%	60%	20%

Transport Placement

DEFINITION

The cost of placement of fiber cable used in the interoffice transmission system.

DEFAULT VALUES

Transport Placement, per foot	
Buried	Conduit
$1.77	$16.40

Conduit, cost and number of tubes

DEFINITION

The cost per foot for interoffice fiber cable conduit, and the number of spare tubes (conduit) placed per conduit required.

DEFAULT VALUES

Cost/ft.	$0.60
Spare tubes per route	1

Pullbox Investment

DEFINITION

Investment per fiber pullbox in the interoffice portion of the network.

DEFAULT VALUE

$500

Pullbox Spacing

DEFINITION

Spacing between pullboxes in the interoffice portion of the network.

DEFAULT VALUE

2000 ft.

Pole Investment

DEFINITION

The installed cost of a 40' Class 4, treated southern pine pole.

DEFAULT VALUE

Pole Investment	
Materials	$201
Labor	$216
Total	*$417*

Pole Spacing, Interoffice

DEFINITION

Spacing between poles supporting aerial interoffice fiber cable.

DEFAULT VALUE

150 feet

Signaling

STP Parameters

STP link capacity

DEFINITION

The maximum number of signaling links that can be terminated on a given STP pair.

DEFAULT VALUE

720

STP maximum fill

DEFINITION

The fraction of maximum links, as stated by the STP link capacity input, that the model assumes can be utilized before it adds another STP pair.

DEFAULT VALUE

0.8

STP investment, per pair, fully equipped

DEFINITION

The cost to purchase and install an STP pair, fully equipped for the maximum number of links.

DEFAULT VALUE

Maximum investment: $5,000,000

STP common equipment investment, per pair

DEFINITION

The minimum investment for a minimum-capacity STP, i.e.: the fixed investment for an STP pair that serves a minimum number of links.

DEFAULT VALUE

$1,000,000

Link termination, both ends

DEFINITION

The investment required for the transmission equipment that terminates both ends of an SS7 signaling link.

DEFAULT VALUE

$900.00

Per Link ICO STP Investment

DEFINITION

The surrogate value for the per-link investment in STPs by an independent telephone company, in lieu of a direct calculation in the model.

DEFAULT VALUE

$2.00

Signaling link bit rate

DEFINITION

The rate at which bits are transmitted over an SS7 signaling link.

DEFAULT VALUE

56,000 bits per second

Link occupancy

DEFINITION

The fraction of the maximum bit rate that can be sustained on a SS7 signaling link.

DEFAULT VALUE

0.40

C link cross-section

DEFINITION

The number of C-links connecting a mated STP pair.

DEFAULT VALUE

24

Message Parameters

ISUP messages per interoffice BHCA

DEFINITION

The number of Integrated Services Digital Network User Part (ISUP) messages associated with each telephone call attempt, i.e. the messages switches send to each other over the STP network to negotiate establishing a voice path.

DEFAULT VALUE

6

ISUP message length, bytes

DEFINITION

The average number of bytes in each ISUP (ISDN User Part) message.

DEFAULT VALUE

25 bytes

TCAP messages per transaction

DEFINITION

The number of Transaction Capabilities Application Part (TCAP) messages required per SCP database query. A TCAP message is a message from a switch to a database or another switch that provides the switch with additional information prior to setting up a call or completing a call.

DEFAULT VALUE

2

TCAP message length, bytes

DEFINITION

The average length of a TCAP message.

DEFAULT VALUE

100 bytes

Fraction of BHCA requiring TCAP

DEFINITION

The percentage of BHCAs that require a database query, and thus generate TCAP messages.

DEFAULT VALUE

0.10

SCP investment per transaction per second

DEFINITION

The investment in the Service Control Point (SCP) associated with database queries, or transactions, stated as the investment required per transaction per second. For example, an SCP required to handle 100 transactions per second would require a 2 million dollar investment, if the default of $20,000 is assumed.

DEFAULT VALUE

$20,000

Operator Systems

Input Parameters

Investment per operator position

DEFINITION

The investment per computer required for each operator position.

DEFAULT VALUE

$6,400

Maximum utilization per position, CCS

DEFINITION

The estimated maximum number of CCS that one operator position can handle during the busy hour.

DEFAULT VALUE

32

Operator intervention factor

DEFINITION

The percentage of all operator-assisted calls that require operator intervention. Given the default values for operator-assisted calls, this parameter means that 10% of the 2% operator-assisted calls actually require manual intervention of an operator, as opposed to *automated* operator assistance for credit card calls, etc.

DEFAULT VALUE

10%

Operating Expense Parameters

Input Parameters

Depreciation lives

DEFINITION

The economic life of various network plant categories.

DEFAULT VALUE

Plant Type	Economic Life
motor vehicles	9.16
garage work equipment	11.47
other work equipment	13.22
buildings	48.99
furniture	16.56
office support equipment	11.25
company comm. equipment	7.59
general purpose computers	6.24
digital electronic switching	16.54
operator systems	9.94
digital circuit equipment	10.09
public telephone term. equipment	8.01
NID, SAI	12.00
poles	16.13
aerial cable, metallic	16.80
aerial cable, non metallic	22.11
underground cable, metallic	21.17
underground cable, non metallic	22.87
buried cable, metallic	19.86
buried cable, non metallic	24.13
intrabuilding cable, metallic	15.64
intrabuilding cable, non metallic	23.65
conduit systems	51.35

Cost of capital

DEFINITION

The capital cost structure, including the debt/equity ratio, cost of debt, and return on equity, that make up the overall cost of capital.

DEFAULT VALUES

debt percent	0.450
cost of debt	0.077
cost of equity	0.119
weighted average cost of capital	*0.1001*

Miscellaneous Expense Factors

Variable overhead factor

DEFINITION

The variable component of corporate overhead costs, expressed as a fraction of the sum of all capital costs and operations expenses calculated by the model.

DEFAULT VALUE

10.4%

Federal income tax rate

DEFINITION

The combined federal and state income tax rate on earnings paid by a telephone company. A 34% federal rate and a 6% state rate are assumed.

DEFAULT VALUE

40%

Other taxes factor

DEFINITION

Taxes paid by a telephone company in addition to federal and state income taxes.

DEFAULT VALUE

5%

Forward-looking network operations factor

DEFINITION

The forward-looking factor applied to a specific category of expenses reported in ARMIS called Network Operations. The factor is expressed as the percentage of current ARMIS-reported Network Operations.

DEFAULT VALUE

50%

Central office switching expense factor

DEFINITION

The expense to investment ratio for digital switching equipment, used as an alternative to the ARMIS expense ratio, reflecting forward looking rather than embedded costs. Thus, this factor multiplies the